

# MEMORIAL.

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Concerning Contagious Diseases, in Particular Yellow Fever; Its Origin, Progress, Nature and Action, Together With Suggestions, Remedies and Improvements in Sanitaries, Hospital Buildings, and Appliances, for the consideration of Congress in session assembled :

We all know that the disease called yellow fever has visited this country at different periods, and at each successive time with increased fury and dimensions ; and it is fresh in our memory, when, last summer, thousands of people were suffering, and many thousands swept away to a premature grave, and the cry for help was heard all over the land.

The panic-stricken people who have been spared so far, broken-hearted, and in sorrow, mourn over their losses, and turn their eyes fearful to the future, knowing that it will, sooner or later, ravage again, and sweep away the rest, and destroy the happiness and welfare of multitudes of people hereafter, if nothing is done to save them.

In view of the existing danger, nothing should be spared and no time lost to resolve and to prepare for its reappearance. However, before we determine on a plan, let us look the matter square in the face—see what it is, acquaint ourselves with its nature, progress and habits, and find ways and means which will enable us to suppress and prevent it from doing damage when and wherever it may repeat its appearance.

It is well known that the cause of that disease originates in tropical, low, marshy and uncultivated countries, and that the Mississippi Valley is the most favorable region for it to propagate. It is known that the first principle of that fearful disease is not a vegetable or mineral poison, but that it is a low creation of the animal kingdom—myriads of indefinite small insects, or animalcules, alive and capable of floating in the air. It is known to float near to the ground, and not rise more than 100 feet, and that it is progressive, and fast-multiplying during its period. It is also known that persons inhaling it with the surrounding air become affected, and when in close proximity to others transfer it to them, and, in time, whole families and communities become sick and die.

Before we determine what to do against it, let us see what has been done in similar epidemics or plagues often prevailing amongst animals, such as horses, cattle, sheep, etc.

Whenever such a disease makes its appearance, a method or cleaning process in most European countries has been adopted as a means to suppress its progress, and to protect the unafflicted from catching it from the sick, and is enforced by law, which provides that any animal afflicted with the disease has to be taken from the owner and put to death, and the remains to be destroyed either by fire or any other suitable process.

In other plagues, similar effective methods have been adopted. For instance, the soil in Germany is cleared of the potato bug in a most heroic manner. Any acre planted with potatoes where bugs are discovered is surrounded with wood, and brushwood spread all over, and then set on fire; that plan is rigidly enforced by the Government, determined to kill the plague. The crop of potatoes in the whole empire will be destroyed rather than suffer permanent destruction in future through the same. It will be seen the Government, in its wisdom, and in view of the well-being of the inhabitants, spare nothing—no sacrifice is too great to deliver the people from such existing evils.

Now, the question arises, can we do anything, or, what will we do to deliver mankind, and, in particular, the Southern folks, from existing misery.

Most any one will agree there is a cause for everything, and a consequence for every cause. When cause and consequence produce evil there is also a remedy ; but as many things are mysterious, we are often for long periods deprived of its use until we discover it some way or another ; mysteries have been cleared up and many discoveries made in the past, and still more will be made in the future.

It may not be out of place here to mention a few minor ones in order to show what has been done to save, protect, or preserve articles from destruction. For instance, for documents, papers, or small articles of value, a safe has been invented in which to put them to protect them from destruction through fire or other influences. Vaults have been invented to some extent for the same purpose. Also various means have been devised and adopted to preserve and protect perishable articles, such as meats, fruits, etc., against ordinary influences, which otherwise would decay and be lost; all of these inventions are, to some extent, of importance to the people.

Now, what is more valuable or important than mankind itself? Is there any value above a father—his love and life to his family—or a mother to her loved ones, or children to their parents? No! All money or wealth is a trifle comparative to man and his relationship.

Most every conceivable thing has been invented, problems solved, and progress made in science, art, manufacture, etc., but nothing essential has been done to shield and protect mankind from contagious diseases, although it has been an open subject and question for discussion at least for a century, but with no other result than we have seen last year in the South. Nothing extraordinary has ever been brought forward, and, in consequence of it, the good people of the Mississippi Valley have suffered death and destruction, and are in a state of terror. Whole families have been extinguished, sorrow and fear prevails everywhere, and the sympathy of the whole world is with them. The people of the United States and elsewhere have contributed freely—money has flown in streams to the suffering people from all directions, and a hundred times as much would have been sent if money alone was the thing to save and deliver them from everlasting sorrow and misery. Also, many physicians who volunteered to go down, in many cases not for the sake of compensation, but for principle, to assist in doing good, how many of them have perished, and never saw their loved ones again; and how many good ladies had the same fate—went down, and never returned.

I have been for many years a resident of that unfortunate region, and I am personally in full sympathy with the good people; some of my children have been born there; my family has once been exposed to that unmerciful disease, and I fully comprehend the fearful state of affairs existing at such times, and I am willing and anxious to do all in my power and ability to assist in the good work already taken up by Congress to shield and protect them from further destruction and misery.

Since Congress takes the lead, the foregoing explanations and examples may furnish a broad field to operate on. As we know the cause of yellow fever is not a vegetable or mineral poison, but a low creation of the animal kingdom, which neither can be checked or destroyed by artificial means when it occupies the air over vast areas, we have to fight it nearer home whenever it approaches our homesteads, in a systematic and effective manner, to prevent it from doing the damage it otherwise would do.

It is immaterial to us how or where it may originate; it is enough for us to know we will suffer the consequence by its presence when we inhale it with the air.

Experience shows and establishes the fact that some persons are exempt from getting sick for reasons unknown, owing, perhaps, to some peculiar condition of the system, perspiration, or any other cause; but when persons once being picked out by the disease-producing germs, it may be taken for granted it will not leave them again—it will be with them wherever they may go; it will swarm around them, and the clothing of such persons serves as resting places, and may be considered the hot-bed in which it occasionally nestles, and propagates until it becomes so numerous that said persons are bound to inhale it. Mysterious as it may seem, it nevertheless explains why persons in perfect health leaving home for a more northern place, in order to escape the disease, some of them, in time, have become sick, and, in some cases died.

According to what we know of the disease so far, we may now determine on a plan how to fight and conquer it whenever it comes near to us; but, as this cannot be done single-handed, cities, towns, or corporations, in their respective limits, have to take it up with combined strength.

The necessary forces which can do it are all at our disposal—we have only to prepare and organize them for action—and they consist of a fortification and seven divisions, namely:

The fortification consists of a suitably-constructed building:

Division 1st—Of pure, germ-free air, artificially prepared.

Division 2d—Of an apparatus constructed for the purpose of purifying air.

Division 3d—Of low temperature, artificially produced.



Division 4th—Of pure water, artificially or otherwise obtained.

Division 5th—Of a clearing process of a community by separation.

Division 6th—Of physical treatment.

Division 7th—Of precautionary means.

The fortification means a suitably-constructed building with close-fitting doors and windows, and provided with flues in its walls, or masonry systematically arranged to communicate with each room or apartment, so that from a central point the entire building may be supplied with purified, or germ-free air artificially prepared for that purpose. It is also provided with another system of flues communicating with each apartment, which is designed to ventilate, collect, and convey the exhalation and thrown-out impurities from the inmates to a central point above, where it may pass through a furnace in order to render it offenceless to the surrounding neighborhood. In ordinary times, when no purified air or the apparatus is not needed, the flue system may be connected with the heater, and so may serve for all the heating purposes of the building.

In case of emergency, and in the absence of a building constructed and provided in the above manner, any school-house, court-house, or hotel may be used as a temporary hospital. Flues of sheet metal may be laid all over the house, located on the floors, passages, etc., branching off so as to communicate with each room therein, and may be removed when they are not needed any longer.

Division First consists of pure air artificially freed from all germs or organic matter by an apparatus for the purpose designed.

Division Second consists of an apparatus for purifying air, and the principle of pressure is herein adopted as a means to kill and destroy the dangerous organic matter within. As all animal life can be destroyed either by great heat, intense cold, or pressure, I employ an air-pump, operated by an engine, which pumps the ordinary air into a strong reservoir of iron, in which it will be so compressed as to destroy all living matter within; the supply of air may be drawn from an elevated point. A coil of iron pipe, submerged in a tub of water connects said reservoir with another of a similar kind. Both reservoirs are partially filled with water; the compressed air in the first will escape through the coil into the second reservoir, and through the water within; the dead bodies of the animalcules will unite with the water and be arrested. The second reservoir is provided with a thermometer, pressure gage, and stop-cocks, and is connected with an expanding chamber that communicates with the flue-system which conveys the pure air to all the apartments of the building. Said apparatus consists of the first and second reservoir, a cooling tub, an expanding chamber, an engine and pump, in communication with each other, and also with the flue-system of the building; the engine pumps the ordinary air into the first reservoir, which is partly filled with water; the air passes through the water and escapes in the worm, and in its passage through the same, being cooled and conveyed in the second reservoir, and through the water within; the escape into the expanding chamber is prevented by the stop-cock until the pressure-gage indicates the desired degree of pressure, and then the air in the second chamber is set free to escape. The temperature of the air in that chamber, from which the latent heat has been extracted by the cool water during its passage through the worm, is likely to be equal to that in the open air; but when the compressed air in the second chamber is allowed to suddenly expand and to enter the expanding chamber, will be of extreme low temperature. It will be seen that the organic matter first contained in the air is hereby subjected to four different elements for its destruction. First, to pressure; second, to heat; third, to water, and fourth, to cold. The theory of the above can be substantiated by any scientific person in Washington.

(The idea of furnishing fresh air to a building, a railroad car, or a mine, is not new—it is frequently done. Powerful blowers have been invented, and are in operation here and there, and may answer the purpose for which they are employed, but that plan would be worthless, and of no avail, for suppressing contagious diseases.)

A current of electricity constantly passing through the water in said reservoir will add greatly to the value of the air.

Division Third consists of low temperature in the building, produced with the same apparatus, for the comfort and recreation of the inmates, as well as for the attending physician. Low temperature is very essential, as the germ is a product of the tropics, and will not prosper therein.

Division Fourth consists of purified water, essential to promote and recreate health. It may be obtained either by filtering or distillation. For that purpose an upright boiler, with

tight-fitting top may be used; the top occasionally must be removed to clean the boiler of the impure sediments. The worm passing through the tub of water should not be made of copper, as is usual, it should be either iron or glass.

Division Fifth consists of the precautionary clearing process of an inhabited community. This part is of the utmost importance, and consists in separating the afflicted from the healthy for the same purpose as above mentioned in prevailing diseases among animals—to prevent the disease from becoming epidemic. The desired object will be accomplished when persons with symptoms of the disease are picked out and brought into the asylum prepared in the above manner; but if they are allowed to remain at home, as usual, one would catch it from another, until whole families and communities would become afflicted and die, as has been the case heretofore.

Division Sixth consists of physical treatment. Under such circumstances physicians will be more successful in the treatment of the disease while it is in its first stages, and patients more apt to recover who otherwise, in most instances, would perish and die. It would be of no avail to separate the afflicted from the healthy and put them in an ordinary hospital for treatment, as the accumulation of sick people would only be a hot-bed for the disease to increase in dimensions, and a dangerous place for everybody. In the other case, no fear may be anticipated by physicians, nurses, or the surrounding neighborhood.

Division Seventh consists of precautionary appliances, which may be adopted if necessary. For instance, any person taken from a family or community for physical treatment should be externally freed from all sickening matter before being allowed to enter the main building. A few rooms may be designed through which everything should pass, such as clothing, packages, material, and articles of food, for disinfection. Said rooms should be brought in direct communication with the expanding chamber by a pipe, which would supply these rooms with intensely cold air; some of these rooms may be used as storerooms for meats, vegetables, etc.

This plan once established, and its prompt execution enforced by law, will do more good than now may be anticipated; the boundless influences of the disease will be limited to a trifle and brought under our control—ninety-nine chances will be in our favor. For hospitals in general some features of it will be of service at any time. For instance, in mid-summer, at a temperature of ninety to ninety-five degrees Fahrenheit, the sufferings of the patients are generally increased, and it will be a great relief to them, and they would appreciate it, if the temperature would not rise above sixty to seventy degrees. To the representatives of the people who gather and meet in legislative halls day after day for months, breathing an air ruinous to their health, it would also be of value.

Having thus described my invention, and explained how and by what means to fight and conquer contagious diseases to my best knowledge and ability, I hope that Congress, in its wisdom, will consider the plan herein proposed in all its bearings and consequences, and will adopt it as a suitable means to deliver the people from further suffering, and

I am, most respectfully, its obeying servant,

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